



Sit. Rep. #10
14 January 2008
US AMLR Field Station
Cape Shirreff, Livingston Island, Antarctica

Seabirds:

1. Chinstrap penguin nests in the colony have essentially completed hatching and chicks are growing rapidly. In our reproductive study, 22% of nests have hatched, 6% remain on eggs and 72% have failed. Gentoo penguin nests have reached their peak hatch. To date, 34% of nests in our reproductive study have hatched, 14% are incubating eggs and 52% have failed. Of the 19 known aged chinstrap nests in the colony, two contain chicks and 17 have failed. Of the 14 known aged gentoo nests in the colony, four have hatched, three remain on eggs and seven have failed.

2. On 9 and 10 January we deployed eight satellite transmitters and six Time-Depth-Recorders (TDRs) on chinstrap penguins that are brooding chicks. The satellite transmitters will be used to determine where the penguins forage and the TDRs give profiles of diving behavior. We will recover these instruments after one week of deployment.

3. On 11 January we began diet sampling and collected samples from five nesting chinstrap penguins using the wet offloading technique. Data on total mass of stomach contents, diet composition, and length and sex frequency of krill were recorded for each sample. The majority of diet samples consisted of Antarctic krill (*Euphausia superba*), but one sample also contained otoliths from fish species *Gymnoscopelus nicholsi* and *Electrona carlsbergi*.



4. Brown skuas have continued to hatch this week. Of the 20 pairs of brown skuas that initiated clutches, eight have hatched, three are incubating eggs (one of these pairs is incubating a second clutch after their first clutch failed) and nine have failed.

Pinnipeds:

5. This week we recaptured two of the five foraging location study females to recover the

GPS/Time depth recorders. Three females equipped with GPS/time depth recorders continue to collect data. We will recapture them this week. To date we have collected data on 24 trips. The females we recaptured completed four and five foraging trips. One female is currently out on her 5th trip, one is out on her 6th trip, and one is out on her 8th trip.

6. This week one attendance female lost her pup, most likely to leopard seal predation. In total, two of the 28 attendance females have lost their pups. All females (excluding the female that lost her pup after three trips) have completed at least four trips to sea. They have completed a total of 149 trips. Mean trip duration for each trip is as follows: first trip: 4.1 d (s.d.=1.1, n=28), second trip 4.1 d (s.d.=1.4, n=28), third trip 3.4 d (s.d.=1.3, n=28), fourth trip 3.3 d (s.d.=1.0, n=27), fifth trip 3.3 d (s.d.=1.0, n=24), sixth trip 3.2 d (s.d.=0.6, n=14). Fourteen females have completed their 6th trip, and their pups were weighed according to protocol.



7. This is the first week we did not have any tagged females arrive on our study beaches that we have not previously seen this season. Daily tag re-sight censuses for adult females indicate an 84.5 % return rate from last year (compared to 88.4% for adult females in 2006/07). Natality for adult tagged females is 84.9% compared to 88.4% last year. We now have 84.8% of all the pups of tagged females sexed and we have collected DNA samples from 119 pups of tagged females.

8. Fur seal diet protocol requires collecting 10 scats each week for analysis of fish bones, squid beaks, and krill carapaces. This week we collected our fourth sample. To date 40 scats have been collected. All samples collected have been predominantly krill.

9. We have re-sighted 91 fur seals tagged as pups in previous years. Younger animals are appearing all over the cape and this week we have seen 10 new fur seals tagged as pups. Two of these were two-year-olds. This week we also saw the first two yearlings of the season.

10. Our search for elephant seals returning with instruments paid off this week. On 9 January we saw three elephant seals that we had deployed instruments on last year. We recaptured two of these seals to collect samples and recover instruments. One female

returned without the instrument. We will continue to be on the look out for returning elephant seals and hopefully recover more instruments.

11. Leopard seals continue to arrive. Five were seen on study beaches Saturday. This week we have seen two tagged leopard seals that had not yet been seen this season. In total we have seen six tagged leopard seals, four of which have been tagged at Cape Shirreff. The leopard seals seen on our study beaches appear to be eating predominately fur seal pups, based on the fur found in the scat samples.

Cape Shirreff Weather for the Week:

12. This week we experienced our first storm day of the year, with sustained winds in the high 30's and 40's throughout the day on Tuesday. With blowing snow and sleet, the conditions were such that it was impractical to conduct most outdoor operations.

13. Overall for the week, the winds averaged 12.4 mph with 50 mph as the highest recorded. The majority of the wind was from the west, with easterlies following close behind.

14. Measurable precipitation was scant this week. 0.05 inches was recorded bringing the season total to 1.36 inches. The rainwater collection system of gutters and barrels has done well though, and there is no shortage of fresh water.

15. With an average temperature of 2.1 degrees Celsius, the week has been similar to the past few weeks. The overnight temperatures have on occasion dropped below freezing though, with a low of -0.6 degrees.

Field Station Notes:

16. Today we are looking forward to the arrival of the *R/V Yuzhmorgeologiya* with fresh supplies, mail, and a visit with the staff aboard. It will be great to see everyone, and fresh salad fixings will be much appreciated.

